

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

PCT

To:

see form PCT/ISA/220

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY (PCT Rule 43bis.1)

Date of mailing
(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference
see form PCT/ISA/220

FOR FURTHER ACTION
See paragraph 2 below

International application No.
PCT/IL2005/000247

International filing date (day/month/year)
02.03.2005

Priority date (day/month/year)
02.03.2004

International Patent Classification (IPC) or both national classification and IPC
H04L29/06

Applicant
DVNETWORKS LTD.

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA"). However, this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of three months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA:



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WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITYInternational application No.
PCT/IL2005/000247

10/591479

Box No. I Basis of the opinion

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
 - ☐ This opinion has been established on the basis of a translation from the original language into the following language , which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
 - a. type of material:
 - ☐ a sequence listing
 - ☐ table(s) related to the sequence listing
 - b. format of material:
 - ☐ in written format
 - ☐ in computer readable form
 - c. time of filing/furnishing:
 - ☐ contained in the international application as filed.
 - ☐ filed together with the international application in computer readable form.
 - ☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/IL2005/000247

Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

| | | |
|-------------------------------|-------------|------|
| Novelty (N) | Yes: Claims | 1-16 |
| | No: Claims | |
| Inventive step (IS) | Yes: Claims | 1-16 |
| | No: Claims | |
| Industrial applicability (IA) | Yes: Claims | 1-16 |
| | No: Claims | |

2. Citations and explanations

see separate sheet

Re Item V.

- 1 Reference is made to the following document:
D1 : US 2002/184333 A1 (APPELMAN BARRY) 5 December 2002 (2002-12-05)
- 2 Document D1, which is considered to represent the most relevant state of the art, discloses (the references in parentheses applying to this document):

A communication server (120, fig.1, §13) for delivering data ~~streams~~ to a remote destination (105, fig.1, §13) over a communication network (115, fig.1, §13), the server comprising a replacement unit (130, 135, fig.1, §23) for replacing ~~pieces of~~ data from intended incoming data ~~streams~~ to be received from a remote sender (110, fig.1, §13) by identical data ~~pieces~~ retrievable from a data storage accessible thereto, according to references (§24) ~~supplied by the remote sender~~; characterized by

- an identification unit for identifying the ~~pieces~~ of data to be replaced according to a digital signature that is a function of data (§24) ~~contained in said pieces~~, and by
- ~~an anchor-determination unit for determining locations in the data streams where predefined groups of characters from the stream fulfill a predetermined criterion, the locations of such groups being reference points to the digital signatures.~~

From this, the subject-matter of independent claim 1 differs in that:

- the data is a data stream of a large size instead of a file of a moderate size;
- the units of replacement are anonymous pieces of data from the data stream (i.e. fragments of the whole) instead of non-anonymous whole files, i.e. files which can be identified with a name or URL.
- the way to identify the units of replacement is by anchor points in the stream instead of by fileames.

- 2.1 The subject-matter of claim 1 is therefore novel (Article 33(2) PCT).
- 2.2 The objective problem to be solved by the present invention may be regarded as:
Reducing the bandwidth requirements in the network for the transmission of large

anonymous data streams in the cases where a similar data stream has already been transmitted.

- 2.2 The solution to this problem proposed in claim 1 of the present application is considered as involving an inventive step (Article 33(3) PCT) for the following reasons:

The technical features of subdividing the stream in pieces of data, replacing the single pieces of data instead of the whole stream, and providing anchor points in the stream as a way to identify the units of replacement, are neither known or hinted at in the prior art of caching systems.

- 2.3 Independent claim 14 is a representation of claim 1 in terms of a method. Therefore, the above arguments with respect to novelty and inventive step of the subject matter of claim 1 also apply to said claim, and the subject matter of said claim is also novel and inventive (Article 33(2) and 33(3) PCT).
- 2.4 Claims 2-13, 16 are dependent on claim 1, and claim 15 is dependent on claim 14, and as such also meet the requirements of the PCT with respect to novelty and inventive step.